# CONGRESSIONAL CHOICE OF REGULATORY STRUCTURE AND SUBSTANCE: RAILROAD REGULATION IN THE PROGRESSIVE ERA

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**Abstract**

This paper addresses several issues in contemporary positive political economy, including the role of interest groups in formulating regulation, the extent of Congressional control over agency decisions, and the mechanisms through which this control is exercised. The empirical setting is provided by the railroad regulatory experience of the nineteen teens. First, the paper applies the framework advanced by McCubbins, Noll, and Weingast to explain the regulatory resistance to nominal price increases during an inflationary period. The paper then estimates the relationship between Congressional roll call votes and measures of various constituent interests. The results have several implications. First, they confirm the McCubbins, Noll, and Weingast thesis that Congress designs regulatory structure and procedures with the aim of furthering constituents' interests. Second, they indicate that railway customers exercised considerable political power, and this power was channelled through the Congress. Coupled with other quantitative and qualitative evidence, this confirms the view that Congress dominates the decisionmaking of regulatory agencies.

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Since George Stigler's seminal paper (1971), there has been considerable development in the study of the political economy of regulation.[1] Initially, the "public interest" theory of regulation, which had been dominant for decades, was replaced by a variety of "private interest" theories.[2] In its beginning stages, the "private interest" approach was identified with a single-interest, "producer protection" view of regulation; Stigler contended that regulation is likely to favor well-organized, and therefore often industry, interests. Building upon Stigler's work, Peltzman (1976) and Becker (1983) developed more general models in which the pressures from multiple, opposing interests are reflected in regulatory policy.[3]

One criticism of the early "private interest" literature on economic regulation is that it ignored the role of institutional structure in affecting political outcomes.[4] Economists treated the political system as a "black box" which translated interest group pressure into (privately beneficial) regulatory outcomes. More recent students of political economy have addressed this criticism through formal models of legislative and regulatory processes. In particular, the principal-agent framework has been employed to characterize the relationship between Congress and the regulatory bureacracy it establishes and oversees.[5]

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[1]George Stigler, "The Theory of Economic Regulation," *Bell Journal of Economics*, 2 (1971), p. 2-21.

Two excellent surveys of these developments are: Thomas Romer and Howard Rosenthal, "Modern Political Economy and the Study of Regulation," *Public Regulation: New Perspectives on Institutions and Policies*, edited by Elizabeth E. Bailey, (Cambridge: MIT Press, 1987), pp. 73-116.

Roger G. Noll, "Economic Perspectives on the Politics of Regulation," *Handbook of Industrial Organization, Volume 2*, edited by Richard Schmalensee and Robert Willig, (Elsevier, 1989), pp. 1253-1287.

Important intellectual predecessors to Stigler include Downs (1957) and Olson (1965). Anthony Downs, *An Economic Theory of Democracy* (New York: Harper and Row, 1957). Mancur Olson, *The Logic of Collective Action*, (Cambridge: Harvard University Press, 1965).

[2]A recent, well-reasoned attempt to integrate "public interest" and "private interest" approaches is provided by Michael E. Levine and Jennifer L. Forrence, "Regulatory Capture, Public Interest, and the Public Agenda: Toward a Synthesis," *Journal of Law, Economics, and Organization*, 6 (1990) p. 167-198.

[3]Sam Peltzman, "Toward A More General Theory of Regulation," *Journal of Law and Economics*, 19 (1976) p. 211-240.

Gary Becker, "A Theory of Competition Among Pressure Groups for Political Influence," *Quarterly Journal of Economics*, 98 (1983) p. 371-400.

[4]Romer and Rosenthal, p. 81

[5]One important contribution along these lines was Barry R. Weingast, "The Congressional-Bureacratic System:

Several important issues remain unresolved, however. These include the nature of interest group influence on regulation, the extent of Congressional control over agency decisions, and the mechanisms through which this control is exercised. This paper addresses a number of these issues by exploiting the natural experiment provided by developments involving the Interstate Commerce Commission in the Progressive Era.

This choice of empirical setting is particularly appropriate. As the first United States federal regulatory agency, the I.C.C. has long been a subject of study by economists, historians, and political scientists, serving as a proving ground for competing theories of political economy. As a result, the literature on the I.C.C. has paralleled advances in the study of the political economy of regulation. I.L. Sharfman's exhaustive five volume treatise (1931-1937) embraced an implicit "public interest" theory of regulation; the Commerce Commission was portrayed as a collection of public officials, advancing the public good by successfully balancing the competing needs of the railroads and their customers.[6] This assessment of the I.C.C. came under attack in the fifties and sixties by those who viewed the Commission as the servant of the railroads; the "capture school" of regulation had arrived. Marver Bernstein (1955) argued that the Commerce Commission had passed through a regulatory life cycle, and in its final phase the I.C.C. had come to identify with the interests of the regulated industry.[7] In slight contrast, historian Gabriel Kolko (1965) argued that federal regulation, from its very beginning, had been designed and implemented to advance the railroads' interests, by serving as a mechanism to enforce cartel rates.[8]

A Principal-Agent Perspective (with Applications to the SEC)," *Public Choice*, 44 (1984) p. 147-192.

[6]I.L. Sharfman, *The Interstate Commerce Commission: A Study of Administrative Law and Procedure* Five Volumes, (New York: Oxford University Press, 1931-1937).

[7]Marver Bernstein, *Regulating Business by Independent Commission*, (Princeton: Princeton University Press, 1955).

[8]Gabriel Kolko, *Railroads and Regulation, 1877 - 1916,* (New York: Norton, 1965).

Empirical evidence consistent with Kolko's thesis was provided by Paul MacAvoy's study of trunk line grain rates. Paul MacAvoy, *The Economic Effects of Regulation: The Trunkline Railroad Cartels and the I.C.C. before 1900*,

Contemporary work on the I.C.C. has focused on the interaction between interest groups and the institutional structure of Congress. In the context of Congressional debate over the original 1887 Interstate Commerce Act (I.C.A.), Fiorina (1982, 1986) studies Congressional choice between two alternative regulatory forms: enforcement by the courts or enforcement by an administrative agency. He advances a model in which legislator uncertainty over post-enactment enforcement influences the choice of enforcement mechanism.[9] Gilligan, Marshall, and Weingast (1989, 1990) offer a multiple-interest group interpretation of the I.C.A., a thesis they test by exploiting the difference between the House and Senate versions of the Act.[10] Poole and Rosenthal (1993) emphasize the pivotal role of the South in the passage of the I.C.A..[11]

The researchers surveyed here have profitably focused on two periods from the I.C.C.'s long history: the late nineteenth century, especially the years surrounding the establishment of the Commission in the 1887 Act to Regulate Commerce, and the 1930s, which brought the extension of the Commission's authority to the competitive motor carrier industry.[12] The political and economic events of the early twentieth century, the bridge between these two periods, has been largely unexplored by economists and political scientists.[13] This is an unfortunate oversight, since

(Cambridge: MIT Press, 1965).

[9]Morris Fiorina, "Legislative Choice of Regulatory Forms: Legal Process or Administrative Process?" *Public Choice*, 39 (1982) p. 33-66.

*Opcit*, "Legislator Uncertainty, Legislative Control, and the Delegation of Legislative Power," *Journal of Law, Economics, and Organization*, 2 (1986), p. 33-51.

[10]Thomas W. Gilligan, William Marshall, and Barry R. Weingast, "Regulation and the Theory of Legislative Choice: The Interstate Commerce Act of 1887," *Journal of Law and Economics*, 32 (1989) p. 35-61.

*Opcit*, "The Economic Incidence of the Interstate Commerce Act of 1887: A Theoretical and Empirical Analysis of the Shorthaul Pricing Constraint," *Rand Journal of Economics*, 21 (1990), p. 189-210.

[11]Keith T. Poole and Howard Rosenthal, "The Enduring Nineteenth-Century Battle for Economic Regulation: The Interstate Commerce Act Revisited," *Journal of Law and Economics*, 36 (1993) p. 837-860.

[12]Of course, the partial deregulation of motor carrier operations in the late 1970s through 1980 has sparked considerable study of both political causes and economic effects. For an examination of the former, see Martha Derthick and Paul J. Quirk, *The Politics of Deregulation*, (Washington: Brookings, 1985), who discuss the deregulation of the motor carrier, airline, and telecommunications industries.

[13]Several historians have made noteworthy contributions in this area. Kolko's narrative extends through 1916, with some additional remarks about the 1920 Transportation Act. Albro Martin gives a detailed and critical account of the I.C.C. in the Progressive Era in *Enterprise Denied* (New York: Columbia University Press, 1971). K. Austin

the dramatic changes in the regulatory system from 1906 to 1920 involve a rich set of issues, as a brief summary of that period suggests.

Although the 1887 law establishing the Interstate Commerce Commission prescribed that railroad rates be "just and reasonable," the Commission did not formally receive the authority to set maximum rates until the Hepburn Act of 1906. Even that law did not alter the regulatory regime as significantly as the Mann-Elkins Act of 1910, which gave the Commission the power to suspend and pass judgment on *proposed* rate advances. Prior to this change, the disputed rates remained in effect while the Commission investigated. Armed with this new authority, the Commerce Commission soon confronted a changed economic environment, as business expansion and later World War I brought the highest inflation since the Civil War. Faced with rising input costs, the railroads repeatedly sought a general advance in freight rates only to have the I.C.C. suspend the proposed rates, undertake a lengthy investigation, and then deny the request. As Martin (1971) and Mullin (2000) have argued, both accounting data and asset market evidence indicate that these actions undermined railroad profitability. With U.S. entry into the First World War in April of 1917, inflation, already significant, accelerated, and war-related traffic began to overburden the railroad system. In December 1917 President Wilson nationalized the railroads and called for the railroads to be guaranteed, for the duration of their nationalization, "an annual compensation not exceeding their respective annual net operating income for the 3 years ending June 30, 1917."[14] Congress enacted this recommendation into law with the Federal Control Act of March 21, 1918, which also placed the control of the railroads under a Railroad Administration, not the I.C.C.. Before returning the railroads to private control, Congress passed the Transportation Act of 1920, directing that

Kerr's *American Railroad Politics, 1914-1920* (Pittsburgh: University of Pittsburgh Press, 1968), is an invaluable guide to the struggle over railroad policy at the Congressional and Presidential levels.

[14] Aaron A. Godfrey, *Government Operation of the Railroads, 1918-1920* (Austin: San Felipe Press, 1974), p. 47.

the I.C.C. consider the financial needs of the railroads in its ratemaking decisions. Other aspects of the 1920 Act signalled a new, more protective approach to regulation of the railroads.[15]

Careful study of these regulatory developments can shed light on three research issues.

First, regulatory capture. The "revisionist" view of I.C.C. railroad regulation advanced by Kolko is inconsistent with the Commision's actions and the effects of those actions on railroad profitability during this period. Nevertheless, this experience may very well be reconciliable with a broader "private interest" approach to regulation.

Regardless of which *interests* were served by the I.C.C.'s actions, a separate issue is which *institutions* were responsible for those actions. Were the I.C.C.'s rate denials compatible or incompatible with Congressional and Presidential preferences and intent? In other words, were these decisions the result of agency autonomy from the elected branches of government, or a reflection of Congressional\Presidential dominance of agency decisionmaking? As Weingast and Moran (1983) have noted in their work on the F.T.C., these two theories of bureacratic behavior cannot be empirically distinguished during periods of policy stability. Incidents of policy change, such as those embodied in the Mann-Elkins and Transportation Acts, offer the opportunity to ascertain the responsiveness of agency actions to Congressional\Presidential preferences.[16]

Third, during the Progressive Era there was considerable Congressional debate and action concerning both the structure of the I.C.C. and the substance of railroad policy. McCubbins, Noll, and Weingast (1987, 1989, 1990), aka "McNollgast", have advanced a framework in which elected officials employ administrative structure and procedures to bias agency policies in favor of those officials' constituency.[17] By examining roll call votes on these issues, I can test their thesis, or,

[15]D. Philip Locklin, *The Economics of Transportation* (Homewood: Richard D. Irwin, 1966), pp. 228-239.

[16]Barry R. Weingast and Mark J. Moran, "Bureaucratic Discretion or Congressional Control? Regulatory Policymaking by the Federal Trade Commission," *Journal of Political Economy*, 91 (1983), p. 765-800.

[17]To quote their (1989) definitions of these terms: " ... 'process' refers to the rules and standards that apply to

alternately, I can estimate the expected incidence of various procedures on the relevant interest groups.

The plan of this paper is as follows. Initially I outline the theoretical framework advanced by McCubbins, Noll, and Weingast, which explores the political role of administrative structure and procedures. This framework is also applied to explain the regulatory resistance to nominal price increases during periods of inflation. An appropriate way to test this model is to examine Congressional roll call votes, and so in the succeeding section I present an econometric specification of roll call voting. The sample of votes and data are then described. Finally, I present results and a concluding discussion, which sheds light not only on the McNollgast hypothesis, but also on the nature of interest group and Congressional influence on regulatory policy.

# 1 The "McNollgast" Thesis: Administrative Procedures and Political Control of Agencies

The exposition here summarizes the framework employed by McCubbins, Noll, and Weingast (1989).

Adopting the now standard assumption of public choice, elected officials are goal-maximizing, rational actors. Whether they are Mayhew's "single-minded seekers of reelection," or they pursue

policy decisions by an agency and guide judicial review, whereas 'structure' refers to the allocation of resources and decisional authority among agencies and within an agency. Examples of process are rules of standing and evidence and the assignment of burden of proof, whereas a flow chart depicting the sequence of actions and identifying the associated actors would reveal examples of structure. Most often, structure refers to 'veto gates' – those points in the process where policy can be killed – and which actors control them."

Matthew McCubbins, Roger Noll, and Barry Weingast, "Administrative Procedures as Instruments of Political Control," *Journal of Law, Economics, and Organization*, 3 (1987), p. 243-77.

*Opcit*, "Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies," *Virginia Law Review*, 75 (1989), p. 431-82.

*Opcit*, "Positive and Normative Models of Procedural Rights: An Integrative Approach to Administrative Procedures," *Journal of Law, Economics, and Organization*, 6 (1990), p. 307-342.

a more diverse set of goals, the satisfaction of these goals depends upon pleasing political powerful groups in their constituencies.[18] Thus members of Congress "vote their district," and a President acts to please his national constituency. Since there is considerable heterogeneity in the distribution of interests geographically, politicians facing different constituencies are likely to have different (induced) preferences.

For ease of graphical exposition, assume a two-dimensional policy space represented by $\Re^2_+$. In the context of railroad regulation, the two dimensions could be the rate level (the absolute price paid by shippers generally) and the rate structure (the *relative* price paid by short haul versus long haul shippers). This space consists of policies to be chosen by elected officials and implemented by a regulatory agency. There are three political officials, the House, the Senate, and the President, each of whom is considered as a unitary actor.[19] They possess quadratic preferences over the policy space with ideal points of $H$, $S$, and $P$, which I illustrate with circular indifference curves centered on a corresponding ideal point.[20] These ideal points will be a function of constituent interest, as detailed in the subsequent section. As depicted in Figure 1, the contract curve between any two agents is the line connecting their ideal points, and the Pareto-Optimal set for the three agents consists of all policies within the triangle formed by the three ideal points, triangle $HSP$.[21]

In the following, I initially describe a problem which Congress recognizes and attempts to solve

[18] David Mayhew, *Congress: The Electoral Connection* (New Haven: Yale University Press), 1974.

[19] If we were dealing with a unidimensional policy space, we might think of the "House" and "Senate" officials as the median voters of their respective chambers. The median voter theorem does not apply in this multi-dimensional setting, however. In fact, a substantial body of theoretical literature indicates that any outcome is feasible with pure majority rule decisions taken over a multidimensional space. That possibility need not concern us here, since Congress is not a pure majority rule institution. I assume that institutional features of the Congress (such as the Committee system and rules governing floor action) are sufficient to allow us to represent each chamber's preferences by an ideal point. See Kenneth Shepsle and Barry Weingast, "Structure-Induced Equilibrium and Legislative Choice," *Public Choice*, 37 (1981) for a discussion of the effects of these institutional features.

[20] In the section on econometric specification, I develop this spatial model of preferences in greater detail. Quadratic preferences imply elliptical indifference contours; circular indifference curves are chosen for ease of graphical exposition.

[21] Figure 1 is virtually identical to a diagram in McCubbins, Noll, and Weingast (1989).

in designing a regulatory policy; this description is not intended as a prediction of equilibrium behavior. Consider the following timing. In the first period, elected officials choose a policy to be implemented by a regulatory agency. In the second period, the agency implements *some* policy, although not necessarily the one selected in period 1. In the third and final period, elected officials can choose whether or not to reverse the agency policy.

Figure 1 contains the status quo policy, $SQ$, and each official's indifference curve that passes through $SQ$. We assume for simplicity that new legislation requires the consent of the House, Senate, and President; each official has a veto. This last feature ensures that any successful legislative challenge to $SQ$ must be located within the cigar outlined by the points $SQBDC$. By assumption, bargaining will result in a policy within the Pareto triangle, so any successful challenge to $SQ$ is further restricted to the half-cigar outlined by the points $BCD$. The relative bargaining power of the three politicians will determine the precise point chosen in $BCD$, through some unmodeled bargaining process. Suppose point $L$ in Figure 1 is the policy chosen in period 1.

We now consider the consequences if Congress chose that policy naively, having ignored the possibility that the agency might implement some different policy in period 2. Turn your attention to Figure 2, which reproduces the pareto triangle and the key specified policies. As indicated, the elected officials select the policy, here $L$, but the regulatory agency is left with the task of implementation in period 2.[22] Suppose the agency "deviates," by implementing some other policy, such as $\alpha$ depicted in Figure 2.[23] A key insight of McCubbins, Noll, and Weingast is that as long as the agency deviates to a policy within the pareto triangle $HSP$, no ex-post "legislative correction

[22]The elected officials are assumed to be unable, because of informational requirements, to implement the policy directly. The need for industry-specific expertise creates the need to delegate policy implementation.

[23]The motivation for this deviation is not explored. Several reasons are possible. The agency could collude with one or more of the constituent interests (such as the railroads), or with one or more of the elected officials. As the text discusses, the occurrence of unforeseen contingencies could lead to the implementation of a policy different from the one specified by the original enacting coalition.

or punishment is possible." That is because any such deviation must be preferred by one official to the enacted policy $L$, and so any legislative initiative to rebuke the agency and return regulatory policy to $L$ in period 3 will be vetoed by that official. In this case, for example, policy $\alpha$ is preferred over $L$ by the House, since it lies closer to its ideal point, $H$. A second insight is that any deviation to a point outside the pareto triangle will be overturned by legislative action in period 3, but that action may not be able to restore $L$, since the agency deviation creates a "new status quo" that redefines the bargaining positions of the three officials. (Just as the point $SQ$ in Figure 1 defined the bargaining positions and dictated that only policies within the half-cigar $BCD$ could be enacted).

This illustrates a pervasive feature of the American political system, the "privileged position of the status quo," and a related concept, the importance of veto power. In this example, the regulatory agency is able to implement a policy different from the one enacted because, once implemented, that policy becomes the status quo, and formal legislative action to change the status quo faces substantial hurdles. These hurdles are "veto points" at various steps in the legislative process. In this particular example, the veto points are stark and simple: each of three equals has a veto. A richer, more descriptive model would contain even more veto points, with vetoes often wielded by small minorities. For instance, Congressional committees possess ex-ante "gatekeeping" veto power over legislation within their jurisdiction; a majority of a committee, constituting a tiny minority of the entire chamber, can prevent changes to the status quo by refusing to report such bills to the floor.

These issues are directly relevant to an explanation of railroad regulatory policy in the nineteen teens. Consider the "policy drift" depicted in Figure 2. Policy $L$ is enacted, but the implemented policy changes to $\alpha$, then $\beta$, then $\gamma$. Any attempt to legislate a return to $L$ would be vetoed by the House, which has benefitted from this policy drift. The gradual shift from $L$ to $\gamma$ largely preserves

the rate structure, but significantly reduces the rate level. This is the precisely the pattern of *real* rate changes that would occur if a policy of no *nominal* rate increases persisted during a period of inflation. *Inflation changes the status quo point.* In this illustration, the House, as a minority, cannot directly enact policy $\gamma$, nor can it persuade the Senate and President to do so. In the presence of inflation, however, the House can exercise its veto to defend $\gamma$, and thereby obtain low real rates. More generally, inflation gives a minority with veto power over nominal rate increases the power to obtain real rate reductions.

This raises the question of why politicians, at least in the ex-ante stage, thought in terms of *nominal* and not real rates. I return to this issue shortly.

This description suggests one explanation for Congress' failure during the nineteen teens to reverse the I.C.C.'s rate denial policy; such a reversal was thwarted by a minority with veto power. This descriptions does not explain, however, why the I.C.C. chose a rate denial policy. One possibility is related to the "McNollgast solution" to the "McNollgast problem."

The "McNollgast problem," outlined above, is the inability of ex-post legislative actions to sanction and reverse, and thus presumably deter, regulatory agency deviations from enacted policies. If legislators are risk-averse, each will have an incentive to prevent such deviations, even if each has no reason to believe such deviations are likely to be biased away from his ideal point.[24] The "McNollgast solution" is administrative structure and procedures, which are determined *ex-ante* to constrain and channel agency policy *ex-post.* Given the need to delegate policy implementation to an agency and the desire that the implemented policy serve constituent interests, a (second-best)

[24]Of course, if a legislator believes that a post-enactment deviation is likely to move the policy further from his ideal point, his incentive to prevent such deviation is strengthened. For example, a member of the House of Representatives might fear that after enactment, the Senate and the President could collude and move the implemented policy toward their ideal points by means of agency appointments.

solution is to "enfranchise the constituents of each political actor" in the decisionmaking process of the regulatory agency. For example, giving a particular constituency standing to challenge agency decisions in court helps enfranchise that constituency. In the phrasing of McCubbins, Noll, and Weingast, regulatory structure *mirrors* the politics of the enacting coalition; interests involved in the congressional debate are represented in agency proceedings. Moreover, this structure should *stack the deck* in favor of those interest groups that were important to legislators in the enacting coalition.

If administrative procedures and structure achieve these goals, then the situation depicted in Figure 2 should be replicated at the level of the I.C.C.. Thus the shipping groups supporting the House position, who prefer low rates, should have influence on the I.C.C.. If the politics of agency decisionmaking exactly mirrors the politics of the enacting coalition, then the shipping groups most preferring low rates should lack the power to force nominal rate reductions but possess the power to veto nominal rate increases.

Some qualitative evidence supports this interpretation. First, the enacting coalition of the Mann-Elkins Act of 1910, through a provision in the Act, encouraged the Commission to resist nominal rate increases. This provision directed that "whenever there shall be filed ... a new ... rate ... the burden of proof to show that the ... proposed increased rate is just and reasonable shall be upon the common carrier."[25] As interpreted by the I.C.C., this required a railroad seeking an advanced rate "to prove the new rate as a whole was reasonable, not merely that the increase in the rate was reasonable."[26] In practice, this burden of proof was difficult for the railroads to satisfy; the "deck had been stacked" against the railroads.

[25]quoted by Albro Martin, *Enterprise Denied* (New York: Columbia University Press, 1971), p. 173.
[26]20 *I.C.C. Reports* (1911) 307.

Second, the Mann-Elkins act enfranchised shipping interests by providing for investigatory hearings to ascertain the merits of proposed rate increases. Requests for general rate advances in the nineteen teens mobilized interests opposed to the railroads, and these interests employed the regulatory process to lobby against the increases. The hearings, in addition to their "fact-finding" role, provided a forum for agricultural and mercantile shipping interests opposed to rate increases. The most noteworthy exploitation of this forum occurred in the first case, *Advances in Rates, Eastern Case*. Several Eastern organizations, including the New York Chamber of Commerce, hired as their representative the attorney Louis D. Brandeis.[27] His dramatic claims of the high degree of waste and inefficiency in the railroads' business practices were widely quoted in the newspapers, and finally in the I.C.C.'s report denying the roads' request.

To return to an earlier point, why did politicians in 1910 enact a policy concerning *nominal* rates? It is possible that the enacting coalition of the Mann-Elkins Act sought real rate reductions, and employed these features of the Act and inflation to achieve them. I doubt that was the case, however. The levels of inflation during the Progressive Era should be considered an unforeseen contingency. Prices had steadily *declined* since the end of the Civil War until 1900, and then stabilized. It is therefore likely that Congress, in establishing the provisions of the Mann-Elkins Act, sought to prevent real freight rate increases, but did not intend to force real rate reductions. It turned out that those administrative procedures, coupled with inflation, generated real rate reductions. The policy drift that occurred could not be remedied by legislative action because a sufficiently large number of Congressmen preferred that decline in rates.

Strikingly, this pattern of the regulatory response to inflation, a resistance to rapid cost and associated rate increases, has recurred in other arenas. Joskow (1974, 1989) examined this issue in

[27] Albro Martin, *Enterprise Denied* (New York: Columbia University Press, 1971), p. 196.

the context of state regulation of public utilities.[28] He contends that price regulation does not fully constrain prices to yield competitive profit rates when costs are stable or falling. When nominal costs rise, sparking a need for rate increases, however, the regulated firm's profitability and viability may be undermined by a failure of the agency to pass these costs on in higher prices. Joskow found that periods of inflation have been associated with increased requests for rate reviews by public utilities, and with lower rates of return.

According to McNollgast, administrative structure and procedures are determined by Congress *ex-ante* to constrain and channel agency policy *ex-post*. Quantitative evidence concerning the McCubbins, Noll, and Weingast hypothesis can therefore be supplied from one of two sources. *Ex-post* evidence would indicate whether changes in administrative structure and procedure affect agency policy. *Ex-ante* evidence would indicate whether Congress, anticipating this effect, designs administrative structure and procedure with the aim of influencing subsequent agency policy.

Although this paper offers some qualitative *ex-post* evidence, I largely adopt the *ex-ante* approach. The *ex-post* approach may substantially underestimate the impact of structure and procedure on agency behavior under the McNollgast hypothesis, since *in equilibrium* agency autonomy will be significantly limited. As a consequence, the researcher will not observe agency behavior that would have occurred if a different set of administrative procedures had been in place. Another difficulty, more specific to this particular empirical setting, is that the number of meaningful observations of I.C.C. behavior is quite limited. Although the I.C.C. decided dozens of rate cases in this period, the bulk of the economic impact centered on a few major rate cases.[29]

[28] Paul L. Joskow, "Inflation and Environmental Concern: Structural Change in the Process of Public Utility Price Regulation," *Journal of Law and Economics* 17 (1974), pp. 291-327.

Paul L. Joskow, "Regulatory Failure, Regulatory Reform, and Structural Change in the Electrical Power Industry," *Brookings Papers on Economic Activity*, (Washington: Brookings Institution, 1989) 125-199.

[29] Partially related work on the International Trade Commission has found that statutory direction plays an important role in explaining I.T.C. decisions in anti-dumping cases. Keith B. Anderson, "Agency Discretion or Statutory

Under the *ex-ante* approach, the McNollgast framework implies that a Congress member's vote on regulatory structure can be explained by that member's preferences over (the resulting) policy outcomes. If those policy preferences can, in turn, be linked to observable measures of constituent interest, the "McNollgast" thesis can be tested.

## 2 Econometric Specification of Roll Call Voting

We consider a vote by a member of Congress on a motion, amendment, or bill as a random variable $y_i$ which takes on the value 1 for a "yea" vote and 0 for a "nay" vote.[30] This qualitative response is assumed to be a function of an $m \times 1$ vector of observable legislator and constituent characteristics $x_i$ and a disturbance term $\epsilon_i$ for $i = 1, \ldots, N$. We assume that $\epsilon_i$ is distributed independently of $x_i$, so we may write the probability of a "yea" vote conditional on $x_i$ as:

$$P(y_i = 1|x_i) = E(y_i|x_i) = G(x_i'\beta) = m(x_i); \quad i \quad = 1, \ldots, N \tag{1}$$

where $\beta$ is an $m \times 1$ vector of unknown parameters, $G(\cdot)$ is a function that remains to be specified, and $m(\cdot)$ is the mean regression of $y_i$ on $x_i$. Equation 1 represents a single index model, since the influence of $x_i$ on the conditional expectation of $y_i$ is channeled through its effect on the index $x_i'\beta$.

The model that follows is a standard derivation, and therefore might seem unnecessary. It

Direction: Decision Making at the U.S. International Trade Commission," *Journal of Law and Economics*, 36 (1993) p. 915-935.

[30] In applying this framework, I will a vote in favor of the "railroad position" as a 1, with the "railroad position" specified based upon *a priori* information. This classification system assists in comparing results from different bills.

A separate issue is that I exclude from consideration those legislators who did not cast a vote. This could be accommodated within an ordered trinary choice framework. I have retained the binary choice framework for two reasons. First, my primary concern is the expected effect of various bills on certain interests. This inference is accomplished by studying the characteristics of legislators who voted "yea" or "nay." Second, there is likely to be considerable heterogeneity within the "nonvoting" category, including ill and absent legislators with those who consciously chose to avoid taking a public position.

has been included in order to highlight the joint hypotheses that are being tested in the roll call analysis. Following the important work of McFadden (1974), we can derive the logit formulation from utility maximization.[31] This is demonstrated by the following spatial model of voting, which follows Poole and Rosenthal (1985).[32]

Policies are represented as points in a policy space $\Theta$, a subset of $\Re^k$. For many of my applications the policy space will be unidimensional (pro-railroad versus anti-railroad), but certain cases may involve two or three dimensions. Legislators have preferences over this space, and each legislator $i$ has an ideal point $z_i \in \Theta$. A roll call involves a choice between two alternatives, "nay," denoted $\theta_0$, and "yea," denoted $\theta_1$, with $\theta_0, \theta_1 \in \Theta$. The exact location of each alternative is known to the legislator, but unobservable to the researcher, although in most applications I will hypothesize *a priori* the relative position of the two choices.

Legislator preferences are represented by a quadratic utility function decreasing in distance from the ideal point, plus an additive disturbance term $\nu$.[33]

The utilities from voting "yea" and "nay" are, respectively:

$$U(z_i, \theta_1, \nu_{i1}) = (\theta_1 - z_i)' A (\theta_1 - z_i) + \nu_{i1} \tag{2}$$

[31] Daniel McFadden, "Conditional Logit Analysis of Qualitative Choice Behavior," in P. Zarembka, ed., *Frontiers in Econometrics*, (New York: Academic Press, 1974), p. 105-142.

[32] This is a standard model in political science. See James M. Enelow and Melvin J. Hinich, *The Spatial Theory of Voting*, (New York: Cambridge University Press, 1984), and Douglas Rivers, "Heterogeneity in Models of Electoral Choice," *American Journal of Political Science*, 32 (1988), p. 737 -757. To my knowledge, Poole and Rosenthal were the first to derive a linear logit specification from a spatial model of voting. Keith T. Poole and Howard Rosenthal, "The Political Economy of Roll Call Voting in the 'Multi-Party' Congress of the United States," *European Journal of Political Economy*, 1 (1985) 45-58.

[33] The random component reflects unmeasured aspects of the legislator's choice problem, aspects that may be rooted in unmodeled psychological factors. See Daniel McFadden, "Econometric Models of Probabilistic Choice," in *Structural Analysis of Discrete Data With Economic Applications*, edited by Charles F. Manski and Daniel McFadden, (Cambridge: MIT Press, 1981), p. 198-272.

$$U(z_i, \theta_0, \nu_{i0}) = (\theta_0 - z_i)' A (\theta_0 - z_i) + \nu_{i0} \tag{3}$$

where $A$ is a symmetric, negative semidefinite $k \times k$ matrix. The elements of $A$ have the interpretation of the "salience weights" attached to different dimensions of the policy space.[34]

Legislator $i$ votes for $\theta_1$ over $\theta_0$ if and only if $U(z_i, \theta_1, \nu_{i1}) > U(z_i, \theta_0, \nu_{i0})$. Algebraic manipulation of equations 2 and 3 implies that this legislator votes for $\theta_1$ if and only if

$$\nu_{i0} - \nu_{i1} < -(\theta_0 - z_i)' A (\theta_0 - z_i) + (\theta_1 - z_i)' A (\theta_1 - z_i) \tag{4}$$

Simple matrix algebra reveals that condition 4 is equivalent to:

$$\nu_{i0} - \nu_{i1} < -\theta_0' A \theta_0 + \theta_1' A \theta_1 + z_i' A (\theta_0 - \theta_1) \tag{5}$$

The right hand side of condition 5 consists of two unknown constants and a term linear in $z_i$. The unobservable ideal point $z_i$ is assumed to be an linear function of an observable $m \times 1$ vector of legislator and constituent characteristics $x_i$:

$$z_i = \tilde{\beta}' x_i \tag{6}$$

where $\tilde{\beta}$ is an $m \times k$ matrix of unknown coefficients.

Substituting, we can now express condition 5 in terms of observable variables:

[34] Enelow and Hinich, p. 16-20. In the present context, however, these salience weights will not be estimable.

$$\nu_0 - \nu_1 < -\theta_0' A\theta_0 + \theta_1' A\theta_1 + x_i'\tilde{\beta}A(\theta_0 - \theta_1) = x_i'\beta \tag{7}$$

As this indicates, even perfect knowledge of $\beta$ would not make it possible to disentangle $\tilde{\beta}$, the influence of constituent characteristics on legislator preferences, from $(\theta_0 - \theta_1)$, the contribution of the spatial separation of the two alternatives.[35] For our purposes, however, that is not a serious failing. In applying this specification to particular roll call votes, the primary focus will be on the *relative* influence of different constituent variables. For example, if we find that the number of railroad employees in a state increased the probability of that a Senator voted for a measure, while the number of farmers decreased that probability, we would infer that the measure was expected to help the railroads (or more specifically, railroad employees), and hurt farmers.

We assume that every $\nu_{ij}$, $i = 1, \ldots, N; j = 0, 1$, is an independent draw from a Type I extreme-value distribution, which gives us the standard logit formulation.

My empirical strategy for testing the McNollgast hypothesis can therefore be summarized as follows. For each rollcall vote on a particular administrative structure or procedure, I sketch the likely effect of that structure or procedure on regulatory outcomes. In a uni-dimensional (pro-railroad vs. anti-railroad) policy space, $\Theta$, this step translates into hypothesizing the sign of $\theta_0 - \theta_1$. Under the maintained hypothesis on the signs of the elements of $\tilde{\beta}$ and $A$, this implies a hypothesized sign of the elements of $\beta$. These can then be compared with the logit estimates of $\beta$. In this empirical framework, the McCubbins, Noll, and Weingast hypothesis can be considered as a chain of several joint hypotheses. The links of this chain are the following: (1) administrative

[35] Romer and Rosenthal (1987) have raised this point as a criticism of the "constituent interest" model of roll call voting. Endorsing the work of Poole and Rosenthal, they advocate the alternative, unidimensional, "ideological" model. Such a model is inappropriate here, however, for even if it afforded high predictive power, it could not indicate the expected incidence of various bills across different interest groups.

structure and procedures influence regulatory outcomes, (2) constituent interest groups, cognizant of (1), battle at the enactment stage over structure and procedures, and (3) constituent interest affects Congressional roll call voting. The failure of any *one* of these links in the chain will lead to a rejection of the McNollgast hypothesis. In particular, for McNollgast to hold, it is necessary, but not sufficient, that legislators respond to constituents' interests. It must also be the case that constituents possess an interest in administrative structure and procedure, an interest induced by the expected effect of these structures and procedures on regulatory outcomes. It is in this way that *ex-ante* evidence sheds light on the McCubbins, Noll, and Weingast hypothesis.

## 3 Sample of Votes

Congressional roll calls were obtained from the Inter-University Consortium for Political and Social Research (ICPSR). I extracted all votes from the 60th through 66th Congresses (1909-1921) that involved railroad issues, and I then examined the *Congressional Record* to ascertain which votes merited further formal study.[36] Table 1 presents a brief synopsis of these votes.

1. *The Mann-Elkins Act and the Commerce Court*

   The 61st Congress enacted the Mann-Elkins Act, which considerably strengthened the power of the Interstate Commerce Commission. A controversial feature of the bill was the establishment, at the circuit court level, of a Court of Commerce, which was to possess exclusive jurisdiction over initial appeals from I.C.C. decisions.

   Congressional opponents of the Commerce Court argued that with a jurisdiction composed

[36] I use ICPSR numbers to refer to particular roll calls. For example, RC110H63 refers to ICPSR vote number 110 in the 63rd House of Representatives.

Table 1: Sample of House and Senate Votes

| | | |
|---|---|---|
| RC114H61 | | To strike Commerce Court from Mann-Elkins Bill |
| RC115H61 | (P) | To pass Mann-Elkins Bill |
| RC183H62 | | To pass an appropriations bill that abolishes Commerce Court (CC) |
| RC191H62 | | To override Taft veto and pass appropriations bill (abolishes CC) |
| RC200H62 | | To override Taft veto and pass appropriations bill (abolishes CC) after the civil service part had been changed |
| RC053H65 | | To approve Smith amendment requiring mandatory rate suspension |
| RC099H65 | | To approve Sweet amendment to retain I.C.C. power during federal control |
| RC138H66 | | To approve Anderson amendment on labor section of Esch bill |
| RC139H66 | | To strike the net income guarantee for the first six months of private control |
| RC173H66 | | To recommit Esch-Cummins bill (labor? & ratemaking?) |
| RC174H66 | P | To pass Esch-Cummins conference report |
| | | |
| RC177S61 | | To require mandatory rate suspension |
| RC191S61 | | To give more standing to shippers before Commerce Court |
| RC199S61 | | To strike Commerce Court from Elkins bill |
| RC202S61 | (P) | To pass the Elkins bill |
| RC213S61 | (P) | To pass the Mann-Elkins Conference report |
| RC304S62 | | Amendment to abolish Commerce Court |
| RC065S65 | | To approve Sims (Smith) amendment to require rate suspension |
| RC218S65 | | To preserve I.C.C. power over rates during federal control |
| RC273S66 | P | To approve Conference Report (Esch-Cummins Bill) |
| RC399S66 | | To amend Esch-Cummins Act to repeal rule of ratemaking section |
| RC400S66 | | To amend Esch-Cummins Act by lowering "guarantee" to 3.5% from 5.5% |

KEY:

If a "Yea" vote is definitely Pro-Railroad, denoted 'P'.

If a "Yea" vote is ambiguous, but conjectured Pro-Railroad, denoted '(P)'.

For all other votes, a "Yea" is an anti-Railroad vote.

solely of railroad matters, the Court would become biased in favor of the railroads.

Before final passage, a series of amendments was offered to alter the structure and procedures of the Commerce Court. For example, Senator La Folette proposed an amendment to give shippers standing to bring suit in the Commerce Court against confiscatorily high rates; the unamended bill offered only the railroads the option of bring suits to challenge I.C.C. orders.[37] La Folette's proposal was narrowly rejected.

There were also attempts to remove entirely the Commerce Court from the bill. Amendments to that effect failed in the Senate 28-37 and 25-38, and a motion to recommit the Mann bill back to Committee with instructions to strike the Commerce Court provision failed in the House by a vote of 157-176.[38] The Mann bill then passed 201-126 and the Elkins bill passed 50-12.[39] The Commerce Court was included in the Conference Committee bill that became law, although unfortunately only the Senate conducted a roll call vote on the Conference Report.[40]

The Commerce Court's subsequent history gave creedence to opponents' fears of a pro-railroad bias. By December 20, 1911, fifty-seven cases had been brought before the Court, forty-four of which were brought by railroads seeking to overturn an I.C.C. decision. Twenty-seven cases had been formally addressed by that date, and in twenty of those cases "preliminary injunctions or final decrees had been issued in favor of the railroads."[41] Moreover, in deciding these cases the Commerce Court reconsidered issues of fact settled by the Commission, acting

[37]RC191S61, June 2, 1910.
[38]RC171S61, May 14, 1910, RC199S61, June 3, 1910, RC114H61, May 10, 1910.
[39]RC115H61, May 10, 1910, RC202S61, June 3, 1910.
[40]RC213S61, June 17, 1910. Roll call votes record each member's position, while voice and teller votes give only the totals on each side. Fortunately, most of the important railroad legislative provisions during this period were the subject of roll call votes.
[41]Sharfman, Volume I, 1931, p. 64-65n.

as a "second and superior" I.C.C..[42] Direct evidence of railroad influence came with the impeachment and subsequent conviction of Judge Robert W. Archbald of the Commerce Court, who received financial considerations from railroad litigants.[43]

Congressional opponents attempted to abolish the Commerce Court soon after its creation, by means of riders to appropriations bills.[44] These early attempts were thwarted by President Taft's veto, but later efforts succeeded under President Wilson.[45] These votes directly involve Congressional choice of administrative structure, specifically the nature of judicial review of agency decisions, and therefore they are directly relevant to the McCubbins, Noll, and Weingast thesis. Additionally, Congress abolished the Commerce Court after a series of pro-railroad rulings, an action which may indicate the existence of a pro-shipper Congressional majority.

2. *Sims-Smith Amendment to Require Mandatory Suspension of Rates*

This measure, offered as an amendment to a bill increasing the membership of the I.C.C., would have *required* the I.C.C. to suspend and hold hearings on *any* proposed rate increase; the existing law gave the I.C.C. the power but not the obligation to suspend and judge proposed rate advances. This procedural change would have affected the substance of railroad policy by further delaying rate increases, and thereby would have helped shippers and hurt railroads. The debate and vote on this amendment took place during the Commerce Commission's deliberations on the *Fifteen Percent Case*, and so the amendment served as a

[42]Emory R. Johnson, *Government Regulation of Transportation*, (New York: 1938), p. 230, quoted by Ari Hoogenboom and Olive Hoogenboom, *A History of the I.C.C.: from Panacea to Palliative*, (New York: Norton, 1976), p. 67.

[43]Hoogenboom and Hoogenboom, p. 68.

[44]RC183H62, August 8, 1912, RC191H62, August 15, 1912, RC200H62, August 21, 1912, and RC304S62, August 19, 1912.

[45]RC036H63, September 9, 1913. Neither chamber held a separate roll call vote on that issue.

thinly veiled expression of Congress' opposition to rate increases. The Senate approved the Smith amendment 51-23, but the House voted down the identically worded Sims amendment 76-156.[46] This is fairly strong evidence that a substantial number of members of Congress, including a majority of Senators, were hostile to railroad rate advances. It further suggests that the I.C.C.'s rate denials were the result of Congressional pressure, or at least were consistent with Congressional preferences.

The Sims-Smith measure contained nearly the same language as an amendment advanced by Senator Cummins during the debate on the Mann-Elkins Act.[47]

3. *Cummins-Sweet Amendment Preserving I.C.C. Powers during Federal Control*

These amendments would have preserved the I.C.C.'s authority over rates during federal control, instead of having that authority transferred to the President and his authorized agent, the Director-General of the railroads. Congressional debate revealed the belief that this jurisdictional decision would determine the prospects for freight rate increases. The Cummins amendment failed in the Senate 24-45, and the similarly worded Sweet amendment was rejected by the House 165-210.[48]

4. *Provisions in the Esch and Cummins Bills (Transportation Act of 1920)*

The next set of votes involved ending federal control and establishing a new regulatory regime. The Senate Committee on Interstate and Foreign Commerce reported the Cummins bill, while the corresponding House committee reported the Esch bill. These two bills were combined into a conference report that became the Transportation Act of 1920.

[46]RC065S65, May 22, 1917, and RC053H65, June 27, 1917.
[47]RC177S61, May 26, 1910. Cummins' proposal was rejected 29-43.
[48]RC218S65, February 22, 1918, and RC099H65, February 28, 1918.

5. *Motion to Eliminate Six Month Guarantee of Railroad Net Income During the Initial Period of Private Control*

   Representative Sims offered a motion to recommit the Esch bill to the Committee on Interstate and Foreign Commerce, with instructions to remove the section which guaranteed railroad net income for the first six months of private control. The attempt to deny this subsidy to the railroads failed by a vote of 166-199.[49]

6. *House Motion to Recommit Conference Committee Report (Esch-Cummins Bill)*

   This motion appears to have been aimed at changing the labor and ratemaking provisions of the Esch-Cummins bill (i.e. the Transportation Act of 1920).[50]

7. *Final Passage of the Transportation Act of 1920*

8. *Amendments to Repeal or Revise the Rule of Ratemaking Section of the Transportation Act of 1920*

   The Commerce Commission granted substantial rate increases in the first general rate case decided under the Transportation Act's Rule of Ratemaking.[51] After this decision, the Senate voted on two proposals to amend the Transportation Act of 1920. The first proposal would have repealed the Rule of Ratemaking section, while the second proposal would have reduced the authorized railroad return from 5.5 percent to 3 percent. Both proposals were handily defeated, suggesting a new, friendlier Congressional attitude toward the railroads.[52]

[49]RC139H66, November 17, 1919.
[50]RC173H66, February 21, 1920. I cannot be certain of the intent of this measure, since the motion to recommit carried no instructions to the Committee. However, the surrounding Congressional debate suggests that the labor and ratemaking provisions were the target.
[51]*Increased Rates, 1920*, 58 *I.C.C. Reports*, 220.
[52]RC399S66, February 21, 1921, and RC400S66, February 21, 1921.

# 4 Data

Several groups had a pecuniary stake in the nature of railroad regulation. The following measures of constituent interest were employed. Owners of railroad securities obviously had a direct financial stake in the well being of the railroads. As my measure of this interest, I use the per capita dollar value of railroad bond holdings held by all banks, loan and trust companies in each of the states, as reported by the Comptroller of the Currency for 1914, deflated to 1910 dollars.[53] Although ideally we should like to identify the geographical distribution of *all* railroad security holders, the holdings by banks will likely serve as an effective proxy. The banks, particularly the mutual savings banks, held a significant percentage of their portfolio in railroad bonds, and held sixteen percent of the total railroad bonds outstanding.[54] Moreover, they were active participants in the national debate over transportation policy.[55] I therefore expect that the higher the value of the variable RRBONDS, the more likely a senator or representative will vote for the railroad position on an issue.[56]

Railroad labor was another important group with a clear stake in national railroad policy. They desired a high level of wages, and through that desire they may have possessed an induced interest in securing high rates. Evidence of union rent sharing would not be surprising, since that

[53] *Annual Report of the Comptroller of the Currency*, December 7, 1914, Volume 2, (Washington: GPO, 1915). Specifically, the holdings for National banks, state (commercial) banks, mutual savings banks, stock savings banks, private banks, and loan and trust companies are reported.

[54] Computed from figures in the *Comptroller's Report*.

[55] This was particularly true during debate over the Transportation Act of 1920. The National Association of Owners of Railroad Securities was formed to represent the views of insurance companies, savings banks, and trust companies. This organization advanced a plan for the return of the railroads to private control. See "Report of the Committee on Railroad Securities," *Proceedings of the Eighth Annual Convention of the Investment Bankers Association of America*, 1919, pp. 89-97.

Frederic Washburn, "The Railroads and the Savings Banks," *Journal of the American Bankers' Association*, February 1919, pp. 419-421.

[56] Of course, railroad creditors were not the residual claimants of railroad profits, and as such they might be indifferent to the level of railroad revenues beyond the level sufficient to avoid default. Receivership was a genuine risk throughout this entire period, however, and so it is probable that bondholders were concerned with the overall financial health of the roads.

would be consistent with the modern experience of regulated industries, and the transportation industries in particular.[57] For my measure of railroad labor interest, RRLABOR, I use the number of males engaged in steam railroad occupations in each state, divided by the population of that state, as reported by the Census of 1910. Higher values of RRLABOR are expected to increase the probability that a member of Congress will vote for the "labor position" on an issue. When a vote directly involves wages or the rights of labor, the "labor position" is clear. If the vote concerns freight rates, however, labor might not possess an interest; if higher values of RRLABOR increase the probability of voting for higher rates, then that supports the existence of a railroad capital - railroad labor coalition on rate matters.

A final group with interest in and influence upon railroad policy was railroad customers, or shippers. Agricultural shippers were among the most important elements of this group, both economically and politically. Products of agriculture generated a significant percentage of railroad revenue.[58] Additionally, a large percentage of wheat, corn, and beef was transported by rail.[59] Moreover, farmers and cattle ranchers formed organizations both to oppose rate increases before the I.C.C. and to lobby Congress.[60] As my measure of this interest, I use the per capita value of farm production in thousands of 1910 dollars.[61]

Unlike the previous two measures, for which only state-level data are available, these data are

[57]For the case of trucking, see Nancy L. Rose, "Labor Rent Sharing and Regulation: Evidence from the Trucking Industry," *Journal of Political Economy*, 95 (1987), p. 1146-1178.

[58]*The Railway Library, 1914* (Chicago: Stromberg, Allen, and co, 1915), backcover.

[59]Cotton was the most important agricultural commodity transported primarily by water, not rail. Robert W. Fogel, *Railroads and American Economic Growth* (Baltimore: Johns Hopkins Press, 1964), p. 25.

[60]For instance, see the list of groups appearing before the I.C.C. in "Advances in Rates - Eastern Case," 20 *I.C.C. Reports*, 278.

[61]For members of the House of Representatives, I use the value of farm production in 1900 (in thousands), divided by the district population in 1900, and inflated up to 1910 prices. The value of farm production in 1910 is available, but only by state, and not by Congressional district, and so that has resulted in my choice of using values from 1900 for the House. (See the following footnote.) For the Senate, where only state-level data are relevant, I use the value of farm production (in thousands) in 1910, divided by the state's 1910 population.

Table 2: Statistics on Constituency Characteristics

| VARIABLE | MEDIAN | MEAN | S.D. | MIN | MAX |
|---|---|---|---|---|---|
| RRBONDS | 2.954 | 14.62 | 21.16 | 0.003 | 98.82 |
| RRLABOR | 0.011 | 0.012 | 0.005 | 0.005 | 0.057 |
| FMPROD | 0.082 | 0.090 | 0.066 | 0.00004 | 0.323 |

Data are from the 61st Congress, House of Representatives. The value of DEMOCRAT varies by Congress, and is discussed later.

available at the Congressional district as well as the state level.[62] Since farmers desired low freight rates, I expect that the higher the value of this measure, FMPROD, the less likely a member of Congress will vote for the railroad position.

Statistics on these variables, for the 61st House of Representatives, are reported in table 2.

Clearly, other shippers possessed both interest in and influence upon the level of rates. In particular, the National Industrial Traffic League represented the interests of industrial shippers and merchants. I have been unable to obtain membership data of this or any related organization, however, and so no attempt has been made to quantify this influence.

A final explanatory variable is the political party of the member of Congress.[63] There are several rationales for including this variable. First, the two parties appealled to different clienteles, both nationally and within a given state or district. As Fenno (1977) has noted, a representative's

[62]The data were gathered from the Census of 1900, and aggregated from the county level to the Congressional district level by Stanley B. Parsons, Michael J. Dubin, and Karen Toombs Parsons, *United States Congressional Districts, 1883-1913* (New York: Greenwood Press, 1990).

The Parsons' data was used directly for votes from the 60th through 62nd Congresses. Since Congressional redistricting took effect with the 63rd Congress, I had to re-aggregate the county data to conform with the changed Congressional district boundaries. I discerned the district boundaries for the 63rd through 66th Congresses from Kenneth E. Martis, *The Historical Atlas of United States Congressional Districts, 1789-1983* (New York: The Free Press, 1982), and, when necessary, from various *Congressional Directories*.

[63]Political party classification was based upon data from the ICPSR roll call tapes, with a correction for minor parties based upon Kenneth Martis, *The Historical Atlas of Political Parties in the United States Congress, 1789-1989*, (New York: MacMillan, 1989).

One issue is whether "Insurgent" Republicans should be classified separately from "Regular" Republicans. I have chosen to classify these two groups together.

constituency is not his (entire) district, but a particular majority coalition within that district.[64] If Democrats and Republicans systematically rely on different support groups, then political party may have a great deal of explanatory power even if simply proxies for "support group" characteristics. Peltzman (1984) and Stratmann (1996) each provide evidence supporting this view. In this context, a member coded DEMOCRAT is expected to be less likely to vote for the railroad position; the railroads were members of the Republicans' clientele. Evidence of this clientele is provided in table 3, which reports the median values of the three constituent characteristic variables for Democrat and Republican Representatives, respectively, in the 61st House. Railroad capital and railroad labor were more important, and farmers less important, to Republicans than to Democrats. The second half of the table reports the p values from three Wilcoxon rank-sum tests, one for each variable, which address the hypothesis that the sample of Democrat and Republican values are drawn from populations with the same median. The difference between the two samples is statistically significant for RRBONDS and RRLABOR, but not for FMPROD. A second reason why political affiliation is likely to possess predictive power is "party discipline." The party leadership may influence a member to vote for a position that is not directly in the interest of that member's district. Finally, political affiliation may serve as a crude proxy for ideology. Certain legislators may dislike the railroads more than other legislators, even controlling for constituent interest. In this context, too, we expect a DEMOCRAT to be less likely to vote for the railroad position.

[64]Richard Fenno, *Home Style*. (Boston: Little, Brown, 1977).

Table 3: Median Values of Constituency Characteristics, by Party

| PARTY | RRBONDS | RRLABOR | FMPROD |
|---|---|---|---|
| Democrats | 0.853 | 0.011 | 0.088 |
| Republicans | 5.311 | 0.014 | 0.075 |
| TESTS OF EQUALITY OF MEDIANS: | | | |
| p value | 0.0001 | 0.0001 | 0.42 |

Data are from the 61st Congress.

# 5 Results

First I examine the votes on administrative structure and procedure, and then examine the extent of Congressional control of the I.C.C..

## 5.1 Regulatory Structure and Procedures

A noteworthy example of regulatory structure was the Commerce Court, a subject of repeated battles in the early teens. Tables 4 and 5 present logit estimates of the determinants of Congressional votes on the Commerce Court. (See tables at end of paper.) Consider first table 4, which concerns RC114H61, an amendment in the 61st Congress to strike the Commerce Court from the Mann-Elkins bill. In this and all other votes, I have coded the conjectured "railroad position" as $y = 1$. As a result, a positive coefficient on a constituent variable indicates that higher levels of that variable are associated with a greater probability of voting for the railroad position. In this case, the railroad position supported the Commerce Court. As the earlier discussion indicated, the structure of the Commerce Court favored the roads, since only the railways could challenge I.C.C. orders before the Court.

The results from specification (1) in table 4 lend some support to the McNollgast thesis. Both RRBONDS and FMPROD are of the expected signs, with a coefficient of 0.074 on RRBONDS and a coefficient of -7.268 on FMPROD. Both variables are statistically significant at 10 % level of

significance. Also as expected, a DEMOCRAT was much less likely to vote for the railroads than was a Republican. The overall explanatory power is extraordinarily high, with 96.10 % of all votes correctly predicted. The addition of RRLABOR in specification (2) improves the fit negligibly, and the coefficient on RRLABOR does not statistically significantly differ from zero.

The results change markedly in specification (3), which omits party affiliation. These results display a pattern that will recur with other votes; omitting DEMOCRAT causes the coefficients on RRLABOR and FMPROD to become more positive, with the coefficient on FMPROD often reversing sign. In several instances, RRBONDS also becomes more positive, although that does not occur in the present case. And the explanatory power drops dramatically; here the log likelihood falls by nearly a factor of four. These changes are related to the differing national clienteles of the two parties. Republicans tended to represent those areas with higher values of RRBONDS and RRLABOR, and so when party is omitted, these variables pick up the effect of the Republican's pro-railroad bent. For other votes, I report the results when party is omitted, but they will not be a primary focus.

Table 5 details the results of three votes taken after the Commerce Court was in operation, votes to abolish the Court. Congress had more information about the effects of the Commerce Court when these votes were taken than when the Court was first established. The logit estimates are a strong confirmation of the thesis that Congress devises regulatory structures and procedures to promote constituents' interests. Focus initially on regressions (1), (4), and (7). For all three votes, the estimated effect of RRBONDS is positive, while the estimated effect of FMPROD is negative, and these effects are statistically significant at the 5 % level of significance. As with the vote establishing the Commerce Court, the level of RRLABOR was neither economically nor statistically significant. On this issue, railroad labor does not appear to be part of a coalition

with railroad capital. Once again, political party has a strong explanatory power. These results are overall quite satisfactory, as they indicate the clout of railroad security owners and farmers in influencing their representatives' votes on regulatory structure.

Although the coefficient estimates are of the expected sign, one cannot readily discern *how much* the probability of a pro-railroad vote is influenced by each variable. Table 6 addresses that question, translating the logit estimates from specification (2) in table 5 into probabilities. For a member of Congress possessing the mean value of all explanatory variables, the estimated probability of voting for the railroad position is 0.3059. For a Democrat (with all other variables at their means), this probability sinks to 0.1287, while for a Republican it soars to 0.6657. The second half of the table reports the probability of a pro-railroad vote when each specified variable is set one standard deviation above its mean, and all other variables are held at their means. Thus if RRBONDS is increased by 21.16 above its mean, with all other variables held at their means, the probability of a vote favoring the railroads is 0.5116. This illustrates the particularly strong influence of party affiliation, and to a lesser extent the influence of RRBONDS.

Appropriate administrative procedure was the subject of the Sims-Smith amendment offered in the 65th Congress. This measure would have *required* the I.C.C. to suspend and investigate *any* proposed rate advance. The likely effect would have been further to delay rate increases, to the benefit of shippers and to the detriment of railroad owners. Table 7 reports the logit results from votes by the House and the Senate on this issue. These results are somewhat disappointing; RRBONDS has its expected predictive power, but the coefficient on FMPROD does not differ from zero at conventional levels of significance.

The 65th Congress faced another structural issue as it considered legislation establishing the terms of federal control over the railroads. Recall that Wilson had taken over operation of the

railroads in late December 1917. In early 1918 Congress faced the question of whether the President or the I.C.C. should possess authority over rates during the duration of federal control. The position of railway security holders on this matter was elucidated by Representative Green (R-IA): "those interested in increasing the profits of railways and raising the price of railway stocks and bonds have raised their voices in notes of glee over the prospect that through and by this bill the Interstate Commerce Commission is to be deprived of the power of fixing rates."[65] The first set of logit results reported in table 8, those concerning House vote RC099H65, confirm Representative Green's assessment; railway bondholders favored placing the rate authority in the hands of the President. The estimates from the Senate are much less precise, owing in part to the smaller number of observations. As with the issue of mandatory rate suspension, however, the estimated effect of FMPROD is negligible. As has been the pattern, RRLABOR is insignificant. One further point of interest is that on this issue, a DEMOCRAT was more likely to support the railroad position than was a Republican, contrary to previous votes. This is probably because the railroads favored transferring rate authority to the President, who of course at this time was a Democrat.

In summary, Congressional action on regulatory structure and procedure can be explained by measures of constituent interest, thereby confirming the McNollgast thesis. Even with the strong explanatory power of political party, the results are consistent with the claim that votes on structure and procedure were influenced by the expected effect of those procedures on subsequent agency behavior.

[65] *Congressional Record*, February 26, 1918, 56-3-2707.

## 5.2 Congressional Dominance v. Agency Discretion

As indicated in the introduction, instances of regulatory change provide an opportunity to ascertain the extent of Congressional control over an agency's decisions. Ideally, I would estimate a relationship between agency policy and some proxies of Congressional and Presidential preferences, as was done by Weingast and Moran (1983) and Moe (1985).[66] Such an approach is inappropriate in the current context, however. Although the I.C.C. ruled on hundreds of cases during the nineteen teens, only a few of these, the five general rate advance cases, possessed widespread economic significance.[67] After the Transportation Act of 1920, the Commerce Commission displayed a friendlier attitude toward the railroads, but this too was implemented by means of favorable decisions in infrequent, major cases.[68]

We are left with the task, then, of explaining two distinct regimes, the hostile rate regime of 1911-1917, and the friendlier regime of the early 1920s. I contend that the actions of the Commerce Commission were consistent with Congressional preferences during this period, and that the body of available evidence supports the "Congressional dominance" perspective. Any explanation of the I.C.C.'s actions during these years, however, will suffer from low power against alternative explanations.

A logical starting point for discerning Congressional preferences is to examine the factors behind

[66]Barry R. Weingast and Mark J. Moran, "Bureaucratic Discretion or Congressional Control? Regulatory Policymaking by the Federal Trade Commission," *Journal of Political Economy*, 91 (1983) 765-800. Terry M. Moe, "Control and Feedback in Economic Regulation: The Case of the NLRB," *American Political Science Review*, 79 (1985) 1094-1116.

[67]The I.C.C. ruled against the railroads in four cases: *Advances in Rates, Eastern Case* (1911); *Advances in Rates, Western Case* (1911); the *1915 Western Rate Advance Case* (1915) and the *Fifteen Per Cent Case* (1917). I.L. Sharfman, *The Interstate Commerce Commission: A Study in Administrative Law and Procedure. Volume III-B.* (New York: Oxford University Press, 1936), p. 33. The exception to this pattern was the *Five Per Cent Case* (1914), in which the Eastern roads, after an initial delay, were granted a 5 % freight rate advance.

[68]The Commission granted substantial rate advances in *Increased Rates, 1920* 58 *I.C.C. Reports*, 220. It ordered rate reductions in *Reduced Rates, 1922*, but only after careful consideration of the financial needs of the roads, and in response to a decline in the general price level. 68 *I.C.C. Reports*, 676.

the passage of the Mann-Elkins Act of 1910 and the Esch-Cummins Act of 1920. These two major pieces of legislation serve as bookends to the nineteen teens.

Unfortunately, the votes on the Mann and Elkins bills were nearly completely party-line, and so logit estimates are not instructive.[69] However, we can acquire some information by comparing votes on the Mann bill with votes on the unsuccessful amendment to strike the Commerce Court from the Mann bill, RC114H61. Of the 327 members who voted on both measures, 175 voted for both the Commerce Court and the resulting bill, 126 voted against both the Commerce Court and the bill, and only 26 voted against the Commerce Court but for the Mann bill.[70] This pattern suggests the incidence of the Mann bill was essentially the incidence of the Commerce Court provision; there was little middle ground. And from previous estimates we know that the Commerce Court was expected to help railroad capital and hurt farmers.

At the other end of the decade, the Esch and Cummins bills were designed to return the railroads to private control. Table 9 reports logit estimates from two motions on the Esch-Cummins Conference Report. RC173H66 was a motion to recommit the Conference Report back to Committee for changes, apparently to the labor and ratemaking sections. When this motion failed, the members voted on RC174H66, to approve the Conference Report. As in results from earlier votes, a DEMOCRAT was much less likely to embrace the railroad position, and the estimated effect of RRBONDS was positive, statistically significant, and economically meaningful. In an initially surprising result, the estimated effect of FMPROD is positive, and statistically significant. This result is less surprising when one considers that the Transportation Act of 1920 ushered in

[69] "Party discipline" may be a stronger factor in high-profile votes on major legislation, so this vote pattern is not surprising.

[70] No one voted against the Commerce Court and then for the Mann bill, just as we would expect if legislators vote "sincerely" on each issue.

value-of-service rate regulation, which stood to benefit shippers of (low value, bulk) agricultural commodities.[71] Moreover, a positive effect of FMPROD is less surprising if these votes largely concerned the labor issues, with the rate matters already settled. In that case, we might expect to see a railroad capital - shipper coalition. Although RRLABOR has little explanatory power, all the Republicans who crossed party lines to vote against the Conference Report also voted in favor of the Anderson amendment to the labor section of the Esch bill (RC138H66), indicating that they may have been motivated by labor concerns.[72]

These two "bookend" bills appear to be at least moderately favorable to the railroads, an impression strengthened when one considers their provisions, especially those of the Transportation Act. What could account for the Congressional hostility in the intervening years? Table 10 begins to address this issue, by outlining the changes in the party composition of Congress over this period. The Mann-Elkins Act was passed by the 61st Congress, which possessed a majority of Republicans, the pro-Railroad party. The Democrats gained a majority in the House of Representatives with the 62nd Congress, their first House majority since the 53rd Congress of 1893-1895. The Republicans retrieved control of both houses with the 66th Congress, and would not again lose control until 1933.

Whether due to "ideological" reasons or differences in party clienteles, the Democrats were more hostile to the railroads than were the Republicans. This has been demonstrated by the estimates from several roll call votes. To illustrate this point further, consider table 11. Table 11 predicts the outcome of a vote to establish a Commerce Court (RC114H61) based upon the estimated logit coefficients from table 4 (specification 2) and the values of the explanatory variables from various

[71] I thank Sam Peltzman for making this point.
[72] Kerr, p. 220.

Congresses. Estimated majority support for the Commerce Court evaporates in the 62nd Congress, and a solid majority supporting the Court does not return until the 66th Congress. Of course, we know that the 62nd Congress nearly succeeded in abolishing the Commerce Court, despite President Taft's vetos, and the 63rd Congress, under President Wilson, did abolish the Court.

Further evidence of Congressional preferences is supplied by the *outcomes* of certain votes. Many of these votes were lopsided, so there is very little variation for a statistical analysis to explain. Nevertheless, these votes still convey information about the sentiments of Congress.

As noted earlier, the Sims-Smith amendment to require the I.C.C. to suspend all rate advances was offered during the Commission's deliberations over rate advances in the *Fifteen Per Cent Case*. Representative Sims, for one, was not worried about undermining the Commission's independence with his amendment:

> The commission is not any part of the executive departments of this Government. . . . It is an arm of Congress, created by Congress to do that which Congress does not have the time to do for itself, and within limits, rules, and regulations which are laid down by Congress. They are to execute and carry them out within those limitations, and we have a right to say in the interest of the 100,000,000 of people that rates shall not be radically increased . . . [73]

Although Sims' amendment failed in the House, the nearly identical Smith amendment was passed by the Senate. Members of the I.C.C. may very well have heeded Sims' message; they approved only minimal advances in the *Fifteen Per Cent Case*.

Contrast this motion with two measures offered in the 66th Congress. In *Increased Rates, 1920*, the Commerce Commission granted substantial rate advances in the first case decided under the Transportation Act's Rule of Ratemaking. The Senate voted on two proposals in reaction

[73] *Congressional Record*, June 27, 1917, 55-5-4369.

to this decision; one measure would have repealed the Rule of Ratemaking section, while the second amendment would have reduced the authorized railroad return. These motions were soundly defeated, 59-14, and 61-7, respectively, indicating Congressional concern for the roads' welfare, and tacit approval of the I.C.C.'s new attitude.

Direct legislation was not the sole mechanism for transmitting Congressional preferences to the I.C.C.. Theoretical and empirical work on Congressional control of agency decisions has focused upon the role of oversight committees.[74] Table 12 reports the values of constituency characteristics for the chairman of the House Commerce Committee, the oversight committee for the I.C.C., for the 61st-66th Congresses. This indication of Congressional preferences is consistent with the time-pattern displayed by other measures. A Republican chairman with a solid railroad constituency was replaced in the 62nd Congress by a Democrat with more of an agricultural constituency. The 66th Congress brought the return of a Republican with a moderately strong railroad constituency.

Overall, the pattern of Commerce Commission action in the nineteen teens and early twenties is broadly consistent with several indications of Congressional preferences. Congress was hostile to the railroads for much of the nineteen teens, as was the I.C.C.. This hostility was replaced by a friendlier attitude at the end of the decade, which coincided with a more generous rate advance policy by the Commerce Commission. This evidence supports the view that Congress is a significant influence on agency decisionmaking.

[74]Kenneth A. Shepsle and Barry R. Weingast, "The Institutional Foundations of Committee Power," *American Political Science Review*, 81 (1987) 85-104.

Barry R. Weingast, "Regulation, Reregulation, and Deregulation: The Political Foundations of Agency Clientele Relationships," *Law and Contemporary Problems*, 44 (1981) 147-177.

Weingast and Moran, 1983.

# 6 Conclusion

The results presented in this paper support several contentions. First, shipping interests exercised considerable political influence on railroad policy during the Progressive era; railroad industry "capture" of the I.C.C. did not occur until later years. Moreover, this influence was channelled through Congress, which appears to have exerted substantial control over decisions by the agency. One mechanism for ensuring this control was administrative structure and procedures; analyses of several roll call votes confirm the McCubbins, Noll, and Weingast thesis that Congress designs regulatory structure with the goal of advancing constituents' interests.

Table 4: Vote Establishing the Commerce Court*

| | Logit Estimates: | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| | RC114H61 | RC114H61 | RC114H61 |
| *CONSTANT* | 3.031 | 2.989 | -2.649 |
| | (4.15) | (3.02) | (5.40) |
| *DEMOCRAT* | -9.624 | -9.616 | |
| | (4.81) | (4.80) | |
| *RRBONDS* | 0.074 | 0.074 | 0.042 |
| | (1.76) | (1.76) | (5.79) |
| *RRLABOR* | | 3.080 | 171.288 |
| | | (0.06) | (4.76) |
| *FMPROD* | -7.268 | -7.305 | 1.067 |
| | (1.93) | (1.92) | (0.54) |
| No. Obs. | 333 | 333 | 333 |
| Log Likelihood | -41.835 | -41.833 | -197.347 |
| % Correctly Predicted | 96.10 | 96.10 | 73.27 |

*: Absolute values of t-statistics in parentheses.

Table 5: Votes to Abolish the Commerce Court

| | Logit Estimates: | | | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | RC183H62 | RC183H62 | RC183H62 | RC191H62 | RC191H62 | RC191H62 | RC200H |
| *CONSTANT* | 0.836 | 0.396 | -2.726 | 3.427 | 3.781 | -2.216 | 1.282 |
| | (1.76) | (0.50) | (4.21) | (4.47) | (3.99) | (4.50) | (1.79 |
| *DEMOCRAT* | -2.693 | -2.601 | | -5.515 | -5.615 | | -9.04 |
| | (6.66) | (6.14) | | (8.38) | (8.22) | | (3.68 |
| *RRBONDS* | 0.039 | 0.041 | 0.052 | 0.040 | 0.039 | 0.043 | 0.108 |
| | (3.79) | (3.85) | (5.43) | (3.42) | (3.31) | (5.52) | (2.18 |
| *RRLABOR* | | 28.605 | 119.790 | | -21.193 | 93.427 | |
| | | (0.69) | (2.97) | | (0.67) | (2.95) | |
| *FMPROD* | -6.688 | -6.834 | -1.969 | -12.996 | -12.884 | 0.590 | -8.72 |
| | (2.43) | (2.47) | (0.79) | (3.50) | (3.43) | (0.28) | (2.26 |
| No. Obs. | 219 | 219 | 219 | 274 | 274 | 274 | 207 |
| Log Likelihood | -94.947 | -94.703 | -117.716 | -77.403 | -77.188 | -163.965 | -34.37 |
| % Correctly Predicted | 79.45 | 79.45 | 74.43 | 85.04 | 85.04 | 69.34 | 92.27 |

*: Absolute values of t-statistics in parentheses.

Table 6: Probability of Pro-Railroad Vote on RC183H62

| | | PROBABILITY |
|---|---|---|
| At means of variables | | 0.3059 |
| As a Democrat | † | 0.1287 |
| As a Republican | † | 0.6657 |

| VARIABLE | INCREASE† | PROBABILITY |
|---|---|---|
| RRBONDS | 21.16 | 0.5116 |
| RRLABOR | 0.005 | 0.3370 |
| FMPROD | 0.066 | 0.2192 |

†All other variables are evaluated at their means.

Table 7: Sims-Smith Amendment to Require Rate Suspension*

| | Logit Estimates: | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | RC053H65 | RC053H65 | RC053H65 | RC065S65 | RC065S65 | RC065S65 |
| *CONSTANT* | 0.664 | 0.995 | 0.317 | -0.086 | -0.865 | -2.102 |
| | (1.62) | (1.87) | (0.86) | (0.09) | (0.76) | (2.15) |
| *DEMOCRAT* | -0.522 | -0.624 | | -1.725 | -1.841 | |
| | (1.60) | (1.81) | | (2.45) | (2.50) | |
| *RRBONDS* | 0.057 | 0.057 | 0.064 | 0.086 | 0.094 | 0.103 |
| | (3.55) | (3.51) | (3.95) | (2.67) | (2.85) | (3.34) |
| *RRLABOR* | | -26.185 | -11.462 | | 41.367 | 30.976 |
| | | (0.98) | (0.46) | | (1.41) | (1.26) |
| *FMPROD* | -1.173 | -0.497 | 0.324 | -10.405 | -10.039 | -3.264 |
| | (0.49) | (0.20) | (0.13) | (1.01) | (0.94) | (0.34) |
| No. Obs. | 233 | 233 | 233 | 75 | 75 | 75 |
| Log Likelihood | -128.757 | -128.270 | -129.943 | -29.019 | -28.026 | -31.511 |
| % Correctly Predicted | 68.67 | 68.67 | 67.81 | 81.33 | 82.67 | 82.67 |

*: Absolute values of t-statistics in parentheses.

Table 8: Votes on Presidential v. ICC Rate Authority*

| | Logit Estimates: | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | RC099H65 | RC099H65 | RC099H65 | RC218S65 | RC218S65 | RC218S65 |
| *CONSTANT* | -2.402 | -3.201 | 1.360 | -0.164 | -0.897 | 0.757 |
| | (5.69) | (5.08) | (3.70) | (0.21) | (0.89) | (1.02) |
| *DEMOCRAT* | 4.016 | 4.317 | | 1.519 | 1.635 | |
| | (10.64) | (9.87) | | (2.52) | (2.61) | |
| *RRBONDS* | 0.061 | 0.067 | 0.009 | 0.032 | 0.037 | 0.017 |
| | (6.37) | (6.40) | (1.53) | (1.49) | (1.70) | (0.91) |
| *RRLABOR* | | 52.920 | -73.487 | | 36.462 | 23.869 |
| | | (1.80) | (2.87) | | (1.12) | (0.86) |
| *FMPROD* | -1.698 | -2.593 | -3.654 | -4.270 | -3.566 | -8.989 |
| | (0.69) | (1.02) | (2.09) | (0.68) | (0.56) | (1.45) |
| No. Obs. | 383 | 383 | 383 | 69 | 69 | 69 |
| Log Likelihood | -157.710 | -156.167 | -248.555 | -38.648 | -37.894 | -41.600 |
| % Correctly Predicted | 79.90 | 80.16 | 63.71 | 72.46 | 73.91 | 71.01 |

*: Absolute values of t-statistics in parentheses.

Table 9: Motions on the Esch-Cummins Conference Report*

| | Logit Estimates: | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | RC173H66 | RC173H66 | RC173H66 | RC174H66 | RC174H66 | RC174H66 |
| *CONSTANT* | 0.963 | 1.089 | -2.285 | 1.323 | 1.388 | -1.805 |
| | (2.93) | (2.12) | (5.55) | (3.91) | (2.80) | (4.47) |
| *DEMOCRAT* | -3.322 | -3.352 | | -2.921 | -2.936 | |
| | (11.70) | (11.18) | | (10.68) | (10.22) | |
| *RRBONDS* | 0.027 | 0.027 | 0.038 | 0.023 | 0.023 | 0.036 |
| | (3.36) | (3.32) | (6.10) | (3.02) | (3.00) | (5.53) |
| *RRLABOR* | | -9.490 | 106.198 | | -4.997 | 99.302 |
| | | (0.32) | (3.72) | | (0.18) | (3.47) |
| *FMPROD* | 5.978 | 6.112 | 8.496 | 4.296 | 4.367 | 7.104 |
| | (2.53) | (2.54) | (4.48) | (1.87) | (1.87) | (3.73) |
| No. Obs. | 414 | 414 | 414 | 412 | 412 | 412 |
| Log Likelihood | -165.449 | -165.398 | -248.795 | -180.372 | -180.355 | -246.015 |
| % Correctly Predicted | 85.51 | 85.51 | 69.08 | 82.28 | 82.28 | 68.69 |

*: Absolute values of t-statistics in parentheses.

Table 10: Composition of Congress by Party†

| CONGRESS NUMBER | YEARS | SENATE | HOUSE |
|---|---|---|---|
| 60 | 1907-1909 | 31-61 | 167-223 |
| 61 | 1909-1911 | 32-60 | 172-219 |
| 62 | 1911-1913 | 44-52 | 230-162 |
| 63 | 1913-1915 | 51-44 | 291-134 |
| 64 | 1915-1917 | 56-40 | 230-196 |
| 65 | 1917-1919 | 54-42 | 214-215 |
| 66 | 1919-1921 | 47-49 | 192-240 |
| 67 | 1921-1923 | 37-59 | 131-302 |

†The breakdown is given in the order, Democrats-Republicans. These totals are taken from Kenneth C. Martis, *The Historical Atlas of Political Parties in the United States Congress, 1789-1989*, (New York: MacMillan, 1989), and may not sum to the total number of representatives because members of minor parties have been excluded.

Table 11: Imputed Votes on the Commerce Court, 61st-66th Congresses

| CONGRESS NUMBER | *Actual Vote* |
|---|---|
| 61 | 176-157 |
| | *Predicted Votes* |
| 61 | 187-146 |
| 62 | 111-163 |
| 64 | 125-173 |
| 65 | 193-190 |
| 66 | 203-162 |

Table 12: Values of Constituency Characteristics, Chairman of House Commerce Committee

| CONGRESS NUMBER | PARTY | RRBONDS | RRLABOR | FMPROD |
|---|---|---|---|---|
| 61 | Republican | 4.65 | 0.015 | 0.005 |
| 62-65 | Democrat | 0.79 | 0.008 | 0.095 |
| 65 | Democrat | 0.07 | 0.010 | 0.093 |
| 66 | Republican | 2.62 | 0.011 | 0.010 |

Committee assignments from data prepared by Garrison Nelson, University of Vermont, March 31, 1989: "Congressional Committee Assignments, 1789-1989."

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